

# Red Hat OpenShift Container Platform

A hybrid cloud platform open to any application, team, or infrastructure

## Key benefits:

- ▶ Integrated platform includes container host, Kubernetes, and application life cycle management using your choice of infrastructure.
- ▶ Operators provide an agile DevOps workflow.
- ▶ Security-focused, validated container content and services from a wide partner ecosystem.
- ▶ Faster application development cycles and more frequent software deployments.
- ▶ Simple installation and upgrades, even in air-gapped environments.
- ▶ Application portability with lower operational cost across hybrid cloud, multicloud, and edge footprints.
- ▶ Consistent development experience across the application life cycle.

## Build, deliver, and modernize new and existing applications in less time

Building new cloud-native apps as microservices while managing or modernizing existing apps is challenging. Finding the right tools to design, test, and operate new cloud-native applications based on containers and Kubernetes is complicated, from increased operational and scale challenges and a lack of skills and processes to new security considerations. Refactoring existing applications as microservices while managing monoliths adds a layer of complexity with additional operational burden.

Deploying, running, and managing large-scale deployments in public clouds, on-premise datacenters, and edge locations can create costly inconsistencies and tax operations resources that are better used for accelerating innovation. Simple tasks, such as checks for failing components, misconfigurations, policy and compliance checks, and container image scans, become monumental tasks without centralized, consistent, multicluster life cycle management and security.

## OpenShift Container Platform product overview

Red Hat® OpenShift® Container Platform empowers organizations to modernize their applications and infrastructure, accelerating their digital transformation and fueling growth. OpenShift Container Platform is a single enterprise-ready Kubernetes application platform with a choice of deployment and consumption options that supports every app and environment. With OpenShift Container Platform, organizations can build applications with speed, deploy, run, and manage applications anywhere, safely, and at scale. This allows supporting a variety of use cases, such as artificial intelligence and machine learning (AI/ML) that handles big data, edge computing for IoT, 5G deployments, and application modernization initiatives, while delivering consistent management and operations of the underlying Kubernetes infrastructure in any environment.

Customers can install and run OpenShift Container Platform on supported infrastructure or cloud, including bare metal servers, VMware vSphere, Nutanix AHV, Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform.

## Advanced capabilities

OpenShift Container Platform includes multiple advanced capabilities that are tested and integrated with the underlying certified Kubernetes environment.

- ▶ Automated Day 1 and Day 2 operations
  - ▶ **Operators** provide automated installation, upgrades, and life cycle management for applications, ensuring applications are running correctly and making necessary changes to comply with the desired configuration.
  - ▶ **Helm** brings a Kubernetes-native package manager that developers can use to package their applications and define how to package, deploy, and configure them. It can also automate Day 1 tasks and a limited number of Day 2 operations.
- ▶ **Red Hat OpenShift Service Mesh** provides a uniform way to manage, connect, and observe applications as managing and security between services become more challenging.

- ▶ **Red Hat OpenShift Serverless** allows an application to use compute resources and automatically scale up or down based on use, driven on demand from some event sources.
- ▶ **Red Hat OpenShift Pipelines** brings a Kubernetes-native continuous integration and continuous development (CI/CD) solution on Tekton that provides a streamlined user experience through the OpenShift console.
- ▶ **Red Hat OpenShift GitOps** is built from the open source Argo CD project and lets IT teams implement GitOps workflows for cluster configuration and application delivery for more efficient, security-focused, and scalable software development.
- ▶ **Red Hat OpenShift Virtualization** brings virtual machines to OpenShift to modernize existing applications or run them alongside containers, and serverless, in a Kubernetes-native architecture.
- ▶ **Edge computing** includes 3-node clusters, remote worker nodes, and single nodes to provide organizations full Kubernetes capabilities in a smaller footprint.
- ▶ **Support for diverse workloads** with consistency across applications with a common platform to accelerate the deployment of intelligent applications across a hybrid cloud environment.
  - ▶ Supported workloads include:
    - ▶ Databases.
    - ▶ Data analytics.
    - ▶ AI/ML software, programming languages, and frameworks.
    - ▶ Logging and monitoring.
    - ▶ Web and application servers.
    - ▶ Message broker services.

For more information about Red Hat OpenShift, visit [openshift.com/try](https://openshift.com/try).

### Features and benefits

Feature	Benefit
Scalability	Applications running on OpenShift Container Platform can scale to thousands of instances across hundreds of nodes in seconds.
Multicluster management	Consolidated views of clusters and the use of Kubernetes technologies offer a consistent management layer both on site and public cloud environments.
Persistent storage support	OpenShift Container Platform supports a broad spectrum of enterprise storage solutions, including Red Hat OpenShift Data Foundation and our ecosystem (e.g., DellEMC, Portworx, NetApp) for running both stateful and stateless applications.

Feature	Benefit
Open source standards	OpenShift Container Platform incorporates Open Containers Initiative (OCI), docker-formatted containers, and Cloud Native Computing Foundation (CNCF)-certified Kubernetes for container orchestration—in addition to other open source technologies.
Container portability	Container images built on the OCI industry-standard ensure portability between developer workstations and production OpenShift Container Platform environments.
3-node clusters	Access all of the capabilities of a complete Kubernetes platform with a highly available, smaller footprint for edge architectures comprising both supervisor and worker nodes.
Remote worker nodes	Place single worker nodes in remote locations where centralized supervisor nodes can then manage at a larger site, such as a core or regional datacenter—especially important for remote edge locations that have space-constrained environments and limited power or cooling capabilities.
Single nodes	Combines control and worker capabilities to address edge use cases with small physical environments, low bandwidth, or disconnected sites.
Automated installation and upgrades	Automated installation and over-the-air platform upgrades are supported in cloud with Amazon Web Services, Google Cloud Platform, IBM Cloud, Microsoft Azure, and on-premise using vSphere, Red Hat OpenStack® Platform, Red Hat Virtualization, or bare metal. Services used from the Operator Hub can be deployed fully configured and upgradable with a single operation.
Preinstalled OpenShift hardware	Speed up and simplify edge deployments powered by clusters that arrive with OpenShift pre-installed directly from our original equipment manufacturer (OEM) partners, reducing the resources and time to use the new hardware—placing your applications adjacent to data sources.
Automation	Streamlined and automated container and application builds, deployments, scaling, health management, and more are standard.

Feature	Benefit
Robust ecosystem	An expanding ecosystem of partners provides a wide variety of integrations. Third parties deliver additional storage and network providers, integrated development environment (IDE), CI, integrations, ISV solutions, and more.
Self-service provisioning	Developers can quickly and easily create applications on demand from the tools they use most, while operations retain full control over the entire environment.
Multilanguage support	Developers can use various languages, frameworks, and databases on the same platform.
Integrated CI/CD pipelines	Developers reduce manual deployment work to deploy higher-quality software for continuous delivery (CD) and automated tests.
User interfaces	Developers have direct access to a rich set of command-line tools, a multidevice web console, and Eclipse-based IDEs.
Source-to-image deployment	OpenShift Container Platform provides a toolkit and workflow for producing ready-to-run images by injecting source code into a container and letting the container prepare that source code for execution.

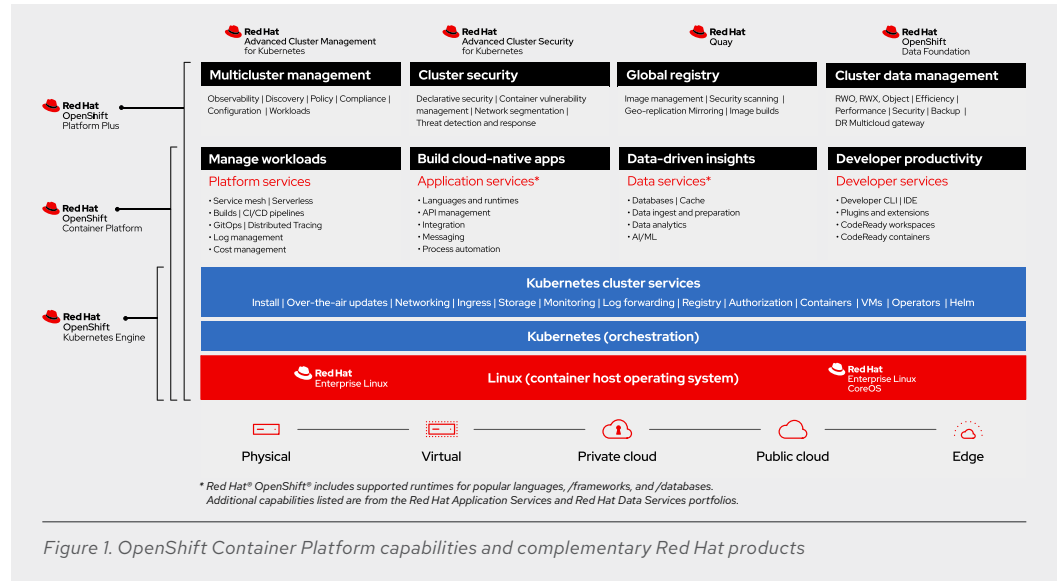
## Red Hat OpenShift portfolio: A choice of container solutions

Red Hat OpenShift is the leading enterprise Kubernetes platform, trusted by organizations across industries and the globe for application innovation.

**Red Hat OpenShift Kubernetes Engine** (formerly Red Hat OpenShift Container Engine) delivers the foundational, security-focused capabilities of enterprise Kubernetes on Red Hat Enterprise Linux® CoreOS to run containers in hybrid cloud environments.

**Red Hat OpenShift Container Platform** adds a full set of operations and developer services and tools, including Serverless, Service Mesh, and Pipelines. It has everything teams need to get started on building new cloud-native applications or migrating existing applications to containers.

**Red Hat OpenShift Platform Plus** builds on OpenShift Container Platform and includes advanced multicluster security and extended management capabilities for organizations looking to build cloud native applications at scale.



[Discover more about other Red Hat OpenShift offerings.](#)



## About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. [A trusted adviser to the Fortune 500](#), Red Hat provides [award-winning](#) support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.

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